PATRIOT® PLUS
BY RITRON

Innovations in Trunked & Conventional 2-Way Radios

MADE IN THE USA

RUGGED, PROFESSIONAL TWO-WAY RADIOS

- Synthesized and Programmable on a per-Channel Basis
- Conventional and Trunked Operation (LTR® and PassPort® Protocols); Programmable on a per-Channel Basis
- 2- or 4-Watt Transmitter Power
- Eleven Channels in Conventional Mode
- In Trunking Mode: Flexible Dynamic Allocation allows up to 100 Channels in any number of System Configurations
- Large Speaker with Very Loud Audio Output, Great in Noisy Environments
- Companded Audio: Reduces Background Noise and Increases Received Voice Audio for Clearer Voice Communications
- 30 Megahertz Bandwidth
- Multi-Mode Capability - Wide or Narrow Bandwidth Switching, Programmable on a Per-channel Basis
- Programmable Quiet Call® Tone Squelch, Digital Quiet Call™ and DTMF Encode
- Channel Scan, Normal and Priority
- Battery Saver
- High-capacity Battery

PATRIOT HANDHELD *OWNER'S MANUAL*

Model:
RTX-454

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RITRON, INC. LIMITED WARRANTY	**BACK COVER**

FIGURES:

1. Radio Controls and Connectors 3
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NOTE:
Refer to page 2 for Accessory information; call RITRON at 1–800–USA–1–USA (800-872–1872) for a complete Accessory listing.

FCC LICENSE REQUIRED

FCC REGULATIONS

LICENSING —

The FCC requires the owners of the radios to obtain a station license before using them. The station licensee is responsible for ensuring that transmitter power, frequency and deviation are within the limits specified by the station license. The station licensee is also responsible for proper operation and maintenance of the radio equipment, including checking the transmitter frequency and deviation periodically by use of appropriate methods.
To get a FCC license for VHF or UHF frequencies, submit FCC application Form 600 as indicated in the block at right. Your Ritron dealer can help you with this process.

SAFETY STANDARDS —

The FCC (with its action in General Docket 79-144, March 13, 1985) has adopted a safety standard for human exposure to radio frequency electromagnetic energy emitted by FCC-regulated equipment. Ritron observes these guidelines and recommends that you do also:

- DO NOT hold the radio so that the antenna is very close to or touching exposed parts of the body, especially the face or eyes, while transmitting. Keep the radio vertical, two-to-three inches away while talking into the front panel.
- DO NOT press the Push-To-Talk except when you intend to transmit.
- DO NOT operate radio equipment near electrical blasting caps or in an explosive atmosphere.
- DO NOT allow children to play with any radio equipment that contains a transmitting device.
- Repair of Ritron products should be performed only by Ritron authorized personnel.

SERVICE

Federal law prohibits you from making any internal adjustments to the transmitter, and/ or from changing transmit frequencies unless you are specifically designated by the licensee.
If your radio equipment fails to operate properly, or you wish to have the radio programmed, contact your authorized dealer or Ritron.

RITRON, INC., Repair Department
505 West Carmel Drive
Carmel, IN 46032 USA

Phone: 317-846-1201
FAX: 317-846-4978

HOW TO OBTAIN AN FCC RADIO LICENSE

Federal Communications Commission (FCC) Licensing Information

Because your Ritron radio operates on Private Land Mobile frequencies, it is subject to the Rules and Regulations of the FCC, which requires all operators of these frequencies to obtain a station license before operating their equipment. Make application for your FCC license on FCC Forms 600 and 159.

*To have forms and instructions faxed to you by the FCC, call the **FCC Fax-On-Demand** system at*
202-418-0177 *from your fax machine; request Document 000600 & Form 159.*

*To have Document 000600 & Form 159 mailed to you, call the **FCC Forms Hotline** at*
800-418-FORM (1-800-418-3676).

*For **help with questions** concerning the license application, contact the FCC at*
888-CALL-FCC (1-888-225-5322).

*You must decide which radio frequency(ies) you can operate on before filling out your application. For **help determining your frequencies**, call Ritron at*
800-USA-1-USA (1-800-872-1872).

ACCESSORIES

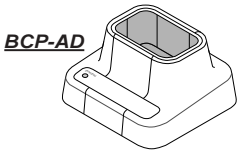
SPARE/ REPLACEMENT BATTERY PACKS:

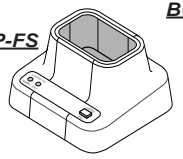
BPX-8N ..... 700 mAH, 9.6 VDC, NiCd
BPX-8N-HC ..... 850 mAH, 9.6 VDC, NiCd
BPX-8N-MH ..... 1200 mAH, 9.6 VDC, NiMH

BATTERY CHARGERS:

BC-A ..... 120 VAC Cube Charger
BCP-AD ..... Drop-In Charger Adapter
BCP-FS ..... Dual Rate Drop-In Charger, Single Unit
BCP-FD ..... Dual Rate Drop-In Charger, Two Unit

BC-A


BCP-AD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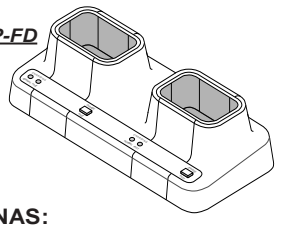
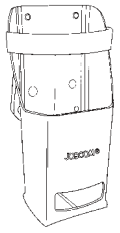

BCP-FD

REPLACEMENT ANTENNAS:

AFM-450 ..... UHF Antenna, 6 inch
AFM-450-S ..... UHF Antenna, Stubby

HOLSTERS:

LHX-A ..... Leather Holster

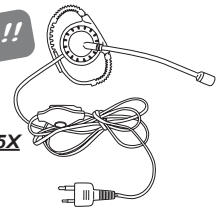

LHX-A

AUDIO ACCESSORIES:

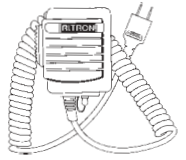
REP-2 ..... Low-Profile Earphone
RHD-5X ..... Ear Clip Headset w/ Boom Mic

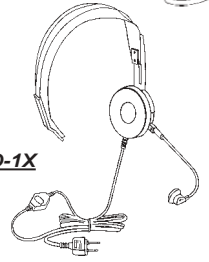
New !!

REP-2


RHD-5X

RSM-3X ..... Remote Speaker/ Mic
RHD-4X ..... Dual Ear Headset w/ Boom Mic
RHD-1X ..... Single Ear Headset w/ Boom Mic


RSM-3X


RHD-1X

RHD-4X

ENVIRONMENTAL PROTECTION:

RTX-RS ..... Radio Rain Shield

New !!

RTX-RS

INTRODUCTION

GENERAL

This manual covers Ritron models:

RTX-454

The PATRIOT Plus RTX-454 handheld is a synthesized, PC-programmable, eleven-channel two-way radio that operates in Trunking and Conventional Modes in the professional UHF FM Business Band.

All RTX Plus radios feature quick-change battery pack and drop-in charger capabilities. See Accessories at left.

INSPECTION

Check your package for the following items:
- PATRIOT Plus RTX-454 radio
- antenna
- rechargeable battery pack
- belt clip and screws
- any optional accessories ordered

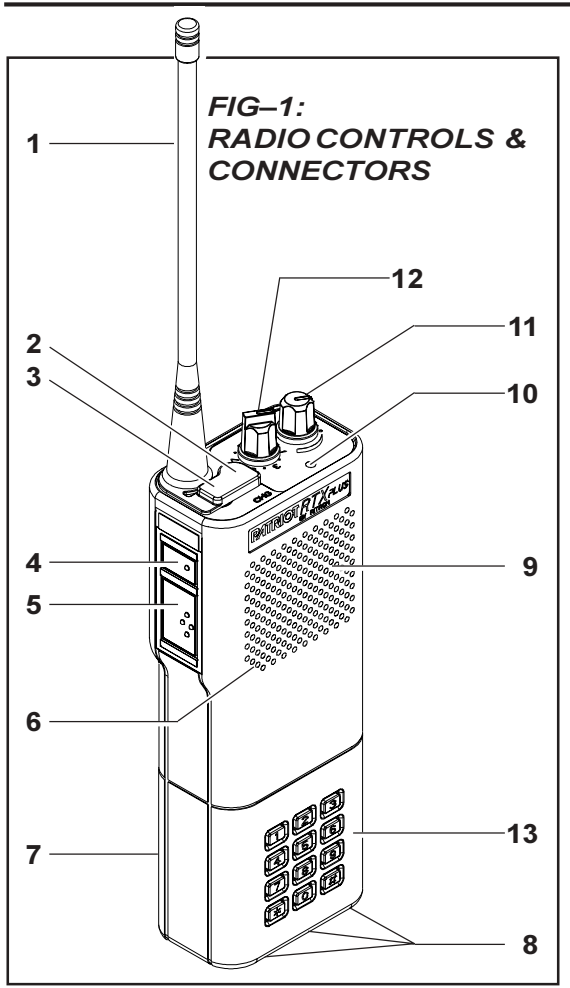
Examine the equipment immediately after delivery and report any damages to the shipping company.

MODEL IDENTIFICATION

The model number is stamped on the label attached to the case back. The model number indicates the radio's operating band.

MODEL	BAND	OPERATING FREQUENCY
RTX-454	UHF	450 - 480 MHz

CONTROL & OPERATION



FIG–1: RADIO CONTROLS & CONNECTORS

1 ANTENNA

The flexible antenna radiates and receives radio signals.

NOTES: Use only the antenna type packaged with the radio.

Before using the radio, make sure the antenna base is threaded fully into the antenna bushing.

2 CHARGE JACK

This Charge Jack allows you to charge the radio with the cube charger provided.

To use the cube charger, plug the cord into the charge jack—marked "CHG" on top of the radio—then plug the charger cube into an 110 VAC outlet. The charger's GREEN lamp lights while the battery is charging, and should go OFF only when the cube is unplugged.

3 AUDIO ACCESSORY JACK

Used to connect optional accessories, such as a remote speaker/ microphone, a headset or an earphone.

4 MONITOR BUTTON

Normally, pressing and releasing the monitor button toggles Quiet Call squelch ON and OFF.

5 PUSH-TO-TALK BUTTON (PTT)

The PTT, a push-button switch, activates the transmitter. Hold down the PTT when you talk into the radio, and release it to receive.

6 MICROPHONE

The Microphone allows your voice to be heard in other radios. Hold the radio about two inches from your mouth while talking into the microphone. Shouting **does not** improve the listener's reception.

7 BATTERY DOOR

This door covers the battery compartment, holding the battery pack in place. Refer to FIG-2, page 5.

8 DROP-IN CHARGER CONTACTS

See the diagram at right. Three charger contacts, visible through the bottom of the radio case, permit charging of the battery pack with an optional RITRON drop-in charger.

9 SPEAKER

The speaker allows you to hear calls on your channel.

10 TRANSMIT/ BUSY LAMP

The Transmit/ Busy Lamp flashes GREEN if the channel is in use, and glows RED when the transmitter is activated.

11 ON/ OFF VOLUME CONTROL

To switch the radio ON, rotate this knob clockwise until it clicks. Rotate it further to increase volume. Rotate this control counterclockwise to turn the unit OFF.

12 CHANNEL SELECT

Rotate the Channel Select knob to select a channel. The radio emits a short tone with each click of this knob.

13 TOUCH TONE KEYPAD, OPTIONAL

If your PATRIOT Plus RTX-450 has this option, you can send Touch Tone digits. A "sidetone" sounds in the radio speaker each time you enter a digit.

To send Touch Tone digits, hold down the PTT while dialing.

<u>IMPORTANT</u>: CHARGE THE BATTERY PACK BEFORE using the radio for the first time. Refer to Batteries, pages 4 and 5.

BATTERIES

BATTERY MAINTENANCE & CONDITIONING

Achieve maximum battery life by fully discharging the battery periodically to condition it.

Condition battery packs by the following procedure as either a preventive measure, or if you suspect reduced capacity:

TO CONDITION THE BATTERY PACK:

1. • Use your radio for a normal work day without charging it.
2. • **If your radio is used only in the Trunked Mode,** you need only leave the radio turned On.
   • **If your radio is used in Conventional Mode**, with the radio turned ON, hold the monitor button for 3 seconds to place the radio (on a Conventional channel) in open squelch mode. Release the monitor button when you hear the radio “beep” rapidly; you will then hear a "rushing" noise. Turn the Volume Control knob fully clockwise to maximize this noise.
3. • Put the radio away in a secure place -- possibly a desk drawer -- where nothing can press against the buttons or controls to accidentally turn it Off or cause it to transmit. Allow the radio to run until it shuts off when the battery is completely discharged. A typical battery pack may require about 8 hours to completely discharge.
4. • When the radio has shut off, charge it overnight for 12 to 16 hours. The battery will be ready for use with renewed capacity.

NOTE: **A new battery** must be fully discharged, then recharged several times before it will reach its maximum charge capacity.

GENERAL

The RTX Plus Series radio is powered by a rechargeable battery pack.

CHARGING

Because the battery pack loses its charge during storage and shipment, fully charge it before first use. To ensure maximum performance for the next day, charge the battery overnight after each day of use.

TO CHARGE THE BATTERY USING A RITRON CUBE CHARGER: Plug the charger cord into the charge jack (marked "CHG") on top of the radio. Then plug the cube into an 110 VAC outlet. The GREEN lamp lights while the battery is charging, and should go out only when the cube or cord is unplugged.

TO CHARGE THE BATTERY USING A RITRON DROP-IN CHARGER: Three charger contacts, visible through the radio case bottom, permit charging the battery with an optional Ritron drop-in charger. The battery pack may be either removed from the radio case for charging, or charged inside the radio case.

Each drop-in charger comes with a spacer to permit charging a "spare" battery while the radio is in use.

To use the drop-in charger, plug it into a 110 VAC outlet. Set either the radio with the battery installed, or only the battery with the battery spacer, into the charger. Each battery contact must rest on a charger contact pin.

BATTERY REMOVAL/INSTALLATION

Unlock the door latch (see FIG-2, page 5). Press down on the door and slide it off the radio. Turn the portable over and tap the battery compartment against the palm of your free hand until the pack drops into your hand.

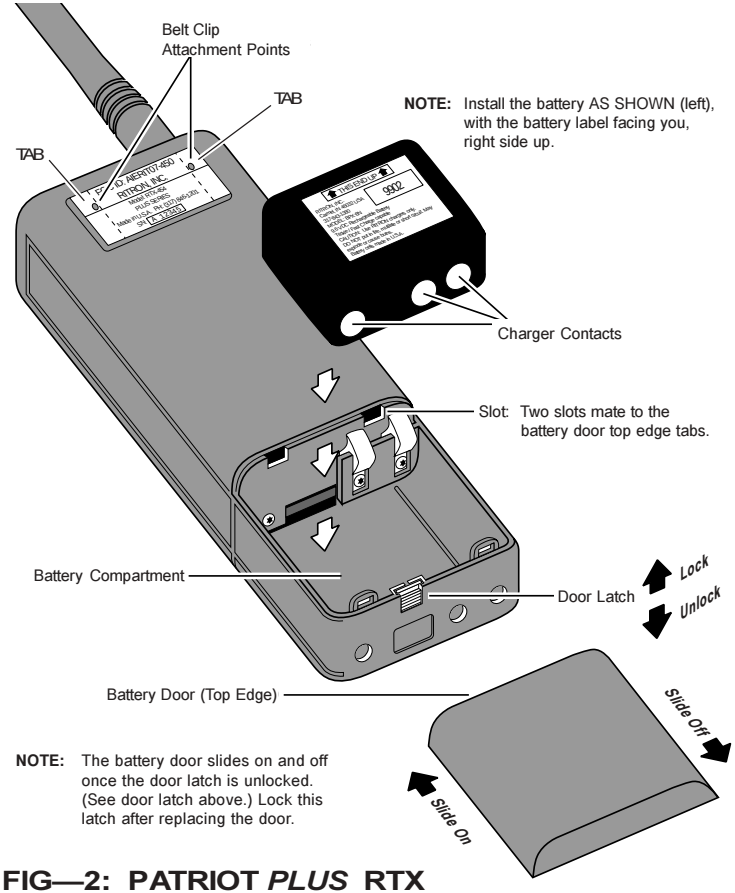
To install the door, align it with the battery compartment, the top edge of the door facing the antenna. Place the door as described, then slide it up and into the slots shown in FIG-2, page 5. Be sure to lock the door latch.

PRECAUTIONS AND NOTES

NOTE: ***Use only RITRON-supplied chargers; other chargers may cause fire, explosion or other damage. Battery pack life averages one year. Follow these guidelines to maximize service life:***

- FULLY DISCHARGE the battery before recharging it.
- CONDITION battery packs once a month as directed in Battery Maintenance & Conditioning.
- CONDITION batteries that are run down.
- CHARGE batteries for 16 hours before storage, and for 16 hours once a month thereafter.
- DO NOT overcharge batteries. Unplug the cube charger after 16 hours to avoid overcharging.
- DO NOT "fast" charge a brand new battery pack, because this may damage the battery. Once the battery has been charged using the "trickle" rate, the fast rate may be used thereafter.
- DO NOT "fast" charge a fully charged battery. This can shorten battery life.
- DO NOT charge batteries in temperatures colder than about 45°F. Charging batteries in temperatures above 95°F. does not harm them, but can reduce charge capacity.
- DO NOT charge or replace a battery in an explosive atmosphere. Contact sparking can ignite an explosion.
- DO NOT dispose of a battery in a fire. An explosion might result.

BATTERIES


Belt Clip
Attachment Points
TAB
TAB
NOTE: Install the battery AS SHOWN (left), with the battery label facing you, right side up.
Charger Contacts
Slot: Two slots mate to the battery door top edge tabs.
Battery Compartment
Door Latch
Lock
Unlock
Battery Door (Top Edge)
Slide Off
Slide On
NOTE: The battery door slides on and off once the door latch is unlocked. (See door latch above.) Lock this latch after replacing the door.

FIG—2: PATRIOT *PLUS* RTX BATTERY PACK INSTALLATION

BELT CLIP

BELT CLIP INSTALLATION

The CBX-A belt clip is designed to bend away rather than break, or damage the radio case.

Remove the clip to bend it back to its original shape. See the following instructions to attach the CBX-A belt clip to your RTX Plus radio. Refer to FIG—2 at left.

1. Carefully remove the two peel-off tabs located on the sides of the label on the case back. Screw holes are located under the tabs.
2. Place the belt clip on the radio case back with the two screw holes aligned with the holes in the radio case. Secure the belt clip with the included screws and washers.

CAUTION: Use only the screws included; longer screws will damage radio electronics.

If you later remove the belt clip, reinstall the screws and washers in the case back to seal out dirt and moisture.

RADIO CARE

OBSERVE CAUTION IN THE FOLLOWING ENVIRONMENTS TO MAXIMIZE THE LIFE OF YOUR RADIO EQUIPMENT:

MOISTURE: PATRIOT Plus SST Series radios are not waterproof. DO NOT directly expose them to rain or excessive moisture.

CHEMICALS: Detergents, alcohol, aerosol sprays or petroleum products can damage the radio case. DO NOT use petroleum solvents of any kind; use a soft cloth moistened with water to clean the case.

EXTREME HEAT: High temperatures can damage the battery and other components. DO NOT expose the units to extreme heat or leave them in direct sunlight.

LOW TEMPERATURES: The capacity of the NiCd battery is greatly reduced in extreme cold. When using the unit in very cold environments, periodically warm the radio under your coat.

EXCESSIVE TRANSMISSIONS: Maximum drain on battery power occurs when transmitting. DO NOT hold the Push-To-Talk switch down longer than necessary during transmission intervals. DO NOT reduce battery service life by attempting to power a radio with a depleted battery; always charge batteries overnight after each day of use.

VIBRATION/ SHOCK: Although your PATRIOT Plus radio is designed to be rugged, it will not survive excessive abuse. Avoid dropping the radio.

NOTE: The optional MHX-A holster provides added protection from weather and shock.

CONVENTIONAL OPERATION

TO TURN ON THE RADIO

Rotate the ON/ OFF/ Volume Control clockwise out of the “click” position.

TO ADJUST THE VOLUME

Rotate the ON/ OFF/ Volume Control clockwise to increase the volume, and counterclockwise to decrease the volume.

TO HEAR CALLS FROM OTHER USERS

Rotate the Channel Control Knob to the desired channel and adjust the volume. The radio can receive broadcasts only when the PTT button is **not pressed**; the volume setting determines if you hear these broadcasts.

TO CALL OTHER USERS

NOTE: Check the TX/ Busy Indicator before transmitting, to confirm the channel is clear. Do not transmit when the indicator flashes GREEN, showing the channel is busy. When the indicator stops flashing GREEN, the channel is open.

To transmit, hold the radio so the microphone is two inches from your mouth, then press and hold the PTT Button. Talk in a normal tone. When you press the PTT Button, the TX/ Busy Indicator glows RED, showing the transmitter is activated.

TO MONITOR

Press the Monitor Button to monitor the channel, if your radio is programmed with QC or DQC. You will hear either one or two “beeps.” See Conventional Operation, Quiet Call/ Monitor, page 7.

TO TURN OFF THE RADIO

Rotate On/ Off/ Volume Control counterclockwise until it “clicks.”

SCANNING

NOTE: The PATRIOT *Plus* radio may be programmed to transmit on either the last active channel or the priority channel by pressing the PTT during scanning; ask your Dealer for help.

NORMAL SCANNING

For normal scanning, when the scan list channel is selected, the radio will “beep” twice, then scan all the channels programmed into the scan list. When a broadcast is received, scanning stops to let you hear communications on that channel.

PRIORITY SCANNING

NOTE: For priority scanning, determine a priority channel at the time of programming; ask your PATRIOT Plus Dealer for help.

Select the channel containing the scan list—the radio will beep twice, then scan all the channels programmed into the scan list. When you receive a broadcast on the predetermined priority channel, **another “beep” sounds before the broadcast**.

A broadcast from any channel other than the priority channel will not be preceded by this “beep.” It will initially have a slight pause in the broadcast while the radio is checking for activity on the priority channel. Scanning resumes when the broadcast ends.

BUSY CHANNEL DELETE

If you wish to temporarily delete a channel in the scan list (for instance, if it is extremely busy), press the monitor button while scanning is on the channel to be deleted. To add the channel back into the scan list, change channels, or power cycle the radio.

You may delete more than one channel. However, the priority channel may not be deleted.

SPECIAL FEATURES

BUSY CHANNEL LOCKOUT

This feature keeps the radio from broadcasting when the channel is busy, often used with Channel Monitoring Lockout. If you press the PTT while the channel is busy with a signal not carrying your QC code, this feature sounds a **“busy” tone** in the speaker and keeps your transmitter shut off.

CHANNEL MONITORING LOCKOUT
(NOT AVAILABLE WITH TRUNKING)

This function may be programmed to keep the radio user from listening to other licensees on a shared channel. The TX/ Busy Indicator flashes GREEN to show when the channel is busy. QC or DQC must be used with this option.

TRUNKED OPERATION

RECEIVING A DISPATCH CALL

1. Switch On the radio by rotating the On/ OFF/ Volume Control out of the “click” position. The TX/ Busy Indicator will flash GREEN.
2. Select the desired system/ group with the Channel Control.
3. Adjust the Volume Control for the desired volume setting.

PLACING A DISPATCH CALL

1. Select the desired system/ group with the Channel Control Knob.
2. Press and hold the PTT Button. You will hear one of the following:
   - **Clear-to-Talk Tone**— a **short high tone** indicates you may begin speaking into the radio.
   - **System Busy Tone**— a **series of low tones** indicates all channels are busy. Release the PTT and try again.
   - **Out-of-Range Tone**— **alternating high/ low tones** indicate you to move the radio to within system range and try again.

WHAT THE RADIO TONES MEAN

CONVENTIONAL OPERATION

SCANNING

TWO BEEPS—
If you rotate the Channel Select Knob, **a second lower "beep"** after the **channel-select "beep"** indicates selection of the Scan List Channel.

ONE BEEP—
If you rotate the Channel Select Knob, **a single lower-toned "beep"** (without a channel select "beep") indicates selection of the last active channel in your scan list.

QUIET CALL/ MONITOR

On a channel programmed with QC or DQC, you can turn the tone squelch feature ON or OFF by pressing the Monitor Button so you hear either one or two "beeps" as follows:

One "beep" indicates QC/ DQC is ON.

Two "beeps" indicate QC/ DQC is OFF.

The radio **"beeps" rapidly** if you press the Monitor Button for 3 seconds to put the radio in open squelch.

CONVENTIONAL & TRUNKED OPERATION

POWER ON/ SELF TEST "OK"

When it is first turned on, the radio emits **an initial "beep"** to indicate it is ready to use. (NOTE: The radio runs a quick "self test" to confirm basic functions.)

ERROR TONES

In the self test (above), if a diagnostic error is detected, **an alternating error tone** sounds. In this case, turn the radio off, then on again. If the error tone still sounds, consult an authorized Ritron service facility, or the Ritron Repair Department.

CHANNEL SELECT

When you rotate the Channel Control knob, **a short "beep"** sounds at each detent.

TRANSMIT DISABLE

Some programmable features such as Receive Only and Busy Channel Lockout will disable the transmitter and cause **a busy tone (series of low tones)** when the PTT Button is pressed.

TRANSMITTER TIME-OUT

The radio sounds **a low, then a high tone**, then the transmitter automatically shuts off if you press and hold down the PTT button continuously longer than the dealer-programmed time. The radio switches to "receive." Dealers can turn this feature ON and OFF.

LOW/ DEAD BATTERY

When the battery voltage has dropped below a certain level, the radio will sound **a short "beep" every 20 seconds** to inform you to charge the battery.

A longer low tone will sound when the battery is completely discharged and should be recharged.

TRUNKED OPERATION

You will hear one of the following tones when you press and hold the PTT:

CLEAR-TO-TALK TONE (LTR/ PassPort)

A short high tone indicates you may begin speaking into the radio.

SYSTEM BUSY TONE (LTR/ PassPort)

A series of low tones indicates all channels are busy. Release the PTT and try again.

OUT-OF-RANGE TONE (LTR/ PassPort)

Alternating high/ low tones indicate you should move within range of the system and try again.

Your radio may emit one of the following tones without your activating the PTT:

REGISTRATION TONES (PassPort)

When you turn the radio on and select a channel with a valid PassPort ID, the radio will emit **three short high tones**, indicating a successful automatic registration.

NOTE: If you press the PTT before the unit registers, you will hear the **System Busy Tone** (see above).

ROAMING TONE (PassPort)

If the radio is out of range of the system, the radio will emit a **short high tone** to inform the user the radio is searching for a valid system with which to register.

TROUBLESHOOTING

Problem	Possible Solution(s)
GENERAL	
The radio does not work at all.	■ Make sure the battery is installed correctly, as shown in FIG-2, Page 5. ■ Recharge or replace the battery. (Note 1.)
Operating features do not work exactly as expected.	■ The radio has been dealer programmed for customized operation. (Consult dealer.)
Reception is poor.	■ Move to a different location. (Note 2.) ■ Confirm the proper antenna is connected to the radio. (See p. 3, "Antenna.")
You cannot hear calls from other radios.	■ Turn Off Quiet Call (coded) squelch. (Note 3.) ■ Be certain your radio receives on the same frequency as the caller transmits. (Note 4.) ■ Recharge the battery. (Note 1.)
Your calls cannot be heard in other radios.	■ Make sure your radio transmits on the receive frequency of radio(s) you want to call. (Note 4.) ■ Recharge the battery.
BATTERY	
The battery loses its charge sooner than expected.	■ Review the battery charging instructions. ■ Conserve the battery. (Note 5.) ■ If the radio is used in extreme cold, warm the radio under your coat. (Note 6.) ■ Replace the battery. (Note 1.)
ERROR TONES	
An error tone sounds when the radio is first switch On.	■ See "Error Tones" on p. 7.
An error tone occurs while you are transmitting.	■ Refer to "Transmitter Time-Out" transmitting, p. 7.
QUIET CALL	
You cannot screen out calls from outside your QC group.	■ Make sure the channel is programmed with Quiet Call. ■ Activate coded squelch. (Note 7.)

TROUBLESHOOTING NOTES

1. Try a battery pack from a working radio. If the radio in question works with that pack, the original battery is suspect. Charge the suspect battery as recommended in this manual. Then if the charged original battery cannot power an RTX Plus handheld, try charging again with another charger. If the battery still doesn't hold a charge, the pack should probably be replaced. However, if the battery appears to be "good" after you try the second charger, the first charger might be faulty. If you think any accessory is not operating properly, contact your dealer or RITRON.

2. Reception can often be improved by moving the radio a short distance. This effect is more noticeable inside buildings. The range of RTX Plus portables equipped with a standard battery pack is about five miles, line-of-sight.

3. If your radio does not detect calls from other radios on the same channel, turn Off Quiet Call squelch. (For the status of QC squelch, press the Monitor switch—a single beep indicates QC squelch is On; a double beep indicates QC squelch is Off.)

4. **CONVENTIONAL OPERATION:** To hear a call, select a channel programmed to receive your caller's transmit frequency. To call another unit, select a channel programmed to transmit the other radio's receive frequency.

   TRUNKED/ REPEATER OPERATION: To operate in a repeater system, your channel(s) must be programmed to work with the repeater's transmit and receive frequencies. (NOTE: A radio channel can hold two separate operating frequencies— one to receive; one to transmit.)

5. Because maximum battery power drain occurs when the radio is transmitting, do not hold down the Push-To-Talk button longer than necessary when transmitting each call. Some power is used if the radio is left On to receive calls. When practical, switch Off the unit.

6. In extreme cold, battery charge capacity is greatly reduced. If you use the RTX Plus portable in very cold conditions, periodically warm the radio under your coat if possible. Use of an optional remote speaker/ microphone will allow you to keep the radio under your coat while transmitting and receiving.

7. For radios to communicate using Quiet Call, each unit must be programmed with the same Quiet Call code. Every code is unique, and your radio will respond only to the code programmed for the channel.

   (For the status of QC squelch, press the Monitor switch—a single beep indicates QC squelch is On; a double beep indicates QC squelch is Off.)

NOTES

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RITRON, INC. LIMITED WARRANTY

WHAT THIS WARRANTY COVERS

RITRON, INC. ("RITRON") provides the following warranty against defects in materials and/or workmanship in **RITRON Radios, Rechargeable Batteries and Accessories** under normal use and service during the applicable warranty period (as stated below). "Accessories" means antennas, holsters, chargers, earphones, speaker/microphones and items contained in the programming and programming/service kits. Rechargeable batteries will be replaced during the applicable warranty period only if leakage occurs or the batteries drop below 75% of rated capacity.

WHAT IS COVERED	FOR HOW LONG	WHAT RITRON WILL DO
PATRIOT Plus RTX-454 Series Radios	1 year*	During the first year after date of purchase, RITRON will repair or replace the defective product, at RITRON's option, parts and labor included at no charge.
RITRON Rechargeable Batteries	1 year*	RITRON will replace the defective battery
Accessories	90 days*	** After date of purchase*

WHAT THIS WARRANTY DOES NOT COVER

- Any technical information provided with the covered product or any other RITRON products;
- Installation, maintenance or service of the product, unless this is covered by a separate written agreement with RITRON;
- Any products not furnished by RITRON which are attached or used with the covered product, or defects or damage from the use of the covered product with equipment that is not covered (such as defects or damage from the charging or use of batteries other than with covered product);
- Defects or damage, including broken antennas, resulting from:
  - misuse, abuse, improper maintenance, alteration, modification, neglect, accident or act of God,
  - the use of covered products other than in normal and customary manner or,
  - improper testing or installation;
- Defects or damages from unauthorized disassembly, repair or modification, or where unauthorized disassembly, repair or modification prevents inspection and testing necessary to validate warranty claims;
- Defects or damages in which the serial number has been removed, altered or defaced.
- Batteries if any of the seals are not intact.

IMPORTANT: This warranty sets forth the full extent of RITRON's express responsibilities regarding the covered products, and is given in lieu of all other express warranties. What RITRON has agreed to do above is your sole and exclusive remedy. No person is authorized to make any other warranty to you on behalf of RITRON. Warranties implied by state law, such as implied warranties of merchantability and fitness for a particular purpose, are limited to the duration of this limited warranty as it applies to the covered product. Incidental and consequential damages are not recoverable under this warranty (this includes loss of use or time, inconvenience, business interruption, commercial loss, lost profits or savings). **Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitation on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. Because each covered product system is unique, RITRON disclaims liability for range, coverage, or operation of the system as a whole under this warranty.**

WHO IS COVERED BY THIS WARRANTY

This warranty is given only to the purchaser or lessee of covered products when acquired for use, not resale. This warranty is not assignable or transferable.

HOW TO GET WARRANTY SERVICE

To receive warranty service, you MUST deliver or send the defective product, delivery costs and insurance prepaid, within the applicable warranty period, to RITRON, INC., 505 West Carmel Drive, Carmel, Indiana 46032, Attention: Warranty Department. Please point out the nature of the defect in as much detail as you can.

You MUST retain your sales or lease receipt (or other written evidence of the date of purchase) and deliver it along with the product. If RITRON chooses to repair or replace a defective product, RITRON may replace the product or any part or component with reconditioned product, parts or components. Replacements are covered for the balance of the original applicable warranty period. All replaced covered products, parts or components become RITRON's property.

RIGHTS TO SOFTWARE RETAINED

Title and all rights or licenses to patents, copyrights, trademarks and trade secrets in any RITRON software contained in covered products are and shall remain in RITRON. RITRON nevertheless grants you a limited non-exclusive, transferable right to use the RITRON software only in conjunction with covered products. No other license or right to the RITRON software is granted or permitted.

YOUR RIGHTS UNDER STATE LAW

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WHERE THIS WARRANTY IS VALID

This warranty is valid only within the United States, the District of Columbia and Puerto Rico.

Pub. 14500005 REV. D 02-05

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